BELIEVE MIDWIFERY SERVICES, LLC

TITLE: PRELABOR RUPTURE OF MEMBRANES

AT TERM

EFFECTIVE DATE: November, 2012

POLICY STATEMENT
Spontaneous rupture of the amniotic membranes before the onset of labor occurs in about 8% of term pregnancies. Approximately 60% to 80% of women with prelabor rupture of membranes at term will enter spontaneous labor within 24 hours. Many aspects of the management of prelabor rupture of membranes are controversial. The practice to consistently provide information about the options of expectant management verses immediate induction to women with term PROM, and to involve them in the decision-making process is congruent with midwifery hallmarks and philosophy of care. In addition, it is explicitly supported by Cochrane reviewers and the TERMPROM researchers.

BLOOD BORNE PATHOGEN
EXPOSURE CATEGORY: I (Involves exposure to blood, body fluids, or tissues)

FUNCTION: Care of Clients

EQUIPMENT:
1. Doppler for fetal assessment
2. Sterile Speculum if necessary
3. Nitrazine paper if necessary
4. Slides and microscope as necessary
5. Amnicator as necessary

POINTS OF EMPHASIS:
The risk of maternal and neonatal infections increases following rupture of the membranes, but the etiology of infection following prelabor rupture of membranes can be difficult to ascertain because pre-existing infection can cause prelabor rupture.

The primary clinical decision related to prelabor rupture of membranes at term is whether or not to induce labor in an effort to reduce perinatal infection risk. Practice patterns vary considerably, and certainty regarding optimal management remains elusive.

Management considerations include client preference regarding expectant management verses induction, optimal timing of induction, frequency of digital vaginal examination, use of antibiotics, maternal and fetal status at the time of prelabor rupture of membranes, and group B streptococcus (GBS) colonization status.

Premature rupture of membranes is a commonly used term, although prelabor rupture of membranes is more precise, and less likely to cause confusion regarding gestational age. Conveniently, they can both be shortened to PROM. Another term that deserves attention is prolonged rupture of membranes. This term is generally defined as rupture of membranes for greater than 24 hours with or without labor. Because “prolonged” implies abnormality, the term promotes that when duration of rupture of membranes exceeds 24 hours, there is a sharp increase in risk for mother and baby. This is NOT supported by current evidence (Hannah, Ohlsson, Farine, Hewson, Hodnett & Myhr, 1996 and American College of Obstetricians and Gynecologists, 1998).

Studies in the 1960s documented an increased incidence of perinatal infection in women with PROM (Lanier, Scarborough, Fillinim & Baker, 1965; Bryans, 1965; Gunn, Mishell & Morton, 1970; Shubeck, Benson, Clark, Berendes, Weiss & Deutschberger, 1966; Taylor, Morgan & Bruns, 1961; and Naeye, 1977). These studies found an increase in maternal and perinatal infection and perinatal mortality in women who had rupture of membranes greater than 24 hours. The recommendation for immediate labor induction and a management goal of birth within 24 hours of rupture were based on these early investigations. These studies have limited relevance today. Many of these studies did not use standardized criteria for determining perinatal infection, and they lacked randomization. In
addition, they included women with both term and preterm gestations. Preterm newborns are more likely to acquire infection and have greater morbidity when compared to term newborns; therefore, the true incidence of neonatal morbidity following 24 hours of PROM in women at term is less than noted in these studies. Finally, it is important to remember that antibiotics effective for the treatment of anaerobic microorganisms were not available in the 1960s; because of this, both maternal and neonatal infection were associated with significant morbidity. Contemporary advances such as screening for group B streptococcus, the treatment of infection, fetal surveillance, and neonatal care have significantly improved outcomes.

Subsequent PROM research in the 1970s and 1980s evaluated management options. Comparisons of immediate induction and expectant management in women with PROM at term found no difference in maternal and neonatal infection rates between the two management options. There was a significantly higher rate of cesarean sections in women who were induced. The contrast with the earlier studies and concerns about rising cesarean section rates prompted many clinicians to consider a less aggressive management approach to term PROM.

A number of additional prospective studies comparing induction and expectant management followed (Guise & Duff, 1992; Natale, Milne, Campbell, Potts, Webster & Halinda, 1994; Shalev, Peleg, Eliyahu & Nahum, 1995; Grant, Serle, Mahmood, Sarmandal & Conway, 1992; Wagner, Chin, Peters, Drexler & Newman, 1989; Marshal, 1993; Alcalay, Hovitz, Reichman, Luski, Quint, Barkai et al, 1996; and Chua, Arulkumaran, Sailes, Selamat, Ratnam, 1995). Results of these studies vary considerably regarding rates of neonatal and maternal infection and cesarean section rates. These differences and significant inconsistencies in treatment protocols and research methodologies make it difficult to draw conclusions about the best management. In an effort to address these issues, the large International Multicentre Term Prelabor Rupture of Membranes Study (the TERMPROM study) was conducted between 1992 and 1995.

Findings of this landmark study were strengthened by its large, multicenter, randomized sample. However, findings were also limited by several factors, most importantly that all women in the study had digital vaginal examinations at the time of PROM diagnosis, exposing women to a significant risk factor for infection. Logistic regression analysis determined that number of vaginal examinations was most predictive for the development of chorioamnionitis. Of the women who had ≤3 vaginal examinations, 2% had clinical chorioamnionitis, whereas the incidence of chorioamnionitis increased to 20% in women who had more than 8 vaginal examinations during labor. The women in the oxytocin induction group had the lowest rate of infection and the fewest vaginal examinations.

The Cochrane collaboration subsequently published a review of the management options for women with term PROM that concluded that the differences in outcomes between induction and expectant management are not substantial, and women should be informed of risks and benefits of each option to make an informed choice (Dare, Middleton, Crowther, Flendady & Varatharaju, 2006).

Expectant management is another term without consensus on definition. It may mean avoidance of induction unless complications occur, or may be used when induction is simply delayed for some period of time.

Antibiotic prophylaxis is encouraged by authors of a 2012 study in the green journal. However, vaginal examinations were not a variable monitored. Absolutely no data is provided in this regard. Interestingly as well, the two mothers in the control group - without antibiotics - who became infected had good reason. One became infected after a manual removal of a retained placenta and the other had a cesarean section. Neonatal outcomes were not different among the two groups.

PROCEDURE:

1. The Nurse Midwife should either schedule the client for evaluation in the clinic the day of rupture, or offer a home visit  within roughly six to eight hours of rupture for fetal heart tone assessment and discussion of care management.
   a. Clients must demonstrate a reactive Audible Acceleration Test or Non-Stress Test to be an appropriate candidate for expectant management at home.
   b. Client teaching regarding fetal kick counts should be reinforced and the Nurse Midwife should be notified with any alteration from the typical routine.
2. Numerous studies have identified the number of digital vaginal examinations as a risk factor for perinatal infection. The timing of the first digital vaginal examination may also be significant. ACOG advises that
the use of the digital vaginal exam during the initial evaluation be discouraged “unless prompt labor and delivery are anticipated.” Visual estimation of cervical status via speculum is recommended as the means to determine cervical status when such information is pertinent to the management plan.

a. Confirmation of gross rupture can be determined via client’s history, Nurse Midwife’s observation, nitrazine, amniocentesis and/or positive ferning.

b. Sterile speculum exam need not be routinely performed for diagnosis in the event of expectant management. In fact, the Nurse Midwives of Believe Midwifery Services are strongly encouraged to avoid placing anything in the vagina unless it would change the care management.

c. Client’s should be instructed to avoid intercourse, tampons, and vaginal flushes.

d. Women should be counseled regarding appropriate hygiene, changing pads frequently, wiping from front to back, and checking their temperature every two hours during the first twenty-four hours and every four thereafter.

e. Clients must accept responsibility for monitoring for signs of infection.

3. Clients should be encouraged to utilize optimal fetal positioning exercises and potentially, chiropractic care. Signs of infection are indication that care should be transferred from the home to the hospital for medical management.

4. Time is an important factor in term PROM, although is not clear whether duration of latency period, length of labor, or total duration from rupture of membranes to birth is the most significant. Studies do indicate risk factors for intra-amniotic infection gradually increases with duration of rupture, but evidences does not support the persistent belief that the risk to mother and baby sharply increases once the membranes have been ruptured for 24 hours. Management decisions in effort to ensure birth prior to 24 hours had not proven to decrease infection, but has instead been associated with a higher cesarean section rate in women with term PROM.

5. Maternal GBS status adds another layer of complexity to management of women with term PROM. Colonization with GBS is a known risk factor for neonatal and maternal infection. GBS and PROM together may have a synergistic affect.

a. In the TERMPROM study, GBS protocol was not consistent and in most cases, a culture was not obtained prior to delivery. In addition, the majority of women who were GBS-positive did not receive antibiotic prophylaxis.

b. A positive GBS culture is often thought to indicate immediate induction in women who have term PROM, but this recommendation is not specified in the GBS guidelines from the Centers for Disease Control and Prevention (CDC). The CDC guidelines simply state, “At the time of...rupture of membranes, intrapartum chemoprophylaxis should be given to all pregnant women identified as GBS carriers.”

c. Neither the ACNM Clinical Bulletin nor the ACOG Committee Opinion on GBS prevention offer specific recommendations regarding management of term PROM in GBS-positive women beyond the recommendation that antibiotic prophylaxis should be offered.

6. Antibiotics are recommended for a woman who is GBS-positive and has:

a. gone into labor;

b. ruptured membranes;

c. an unknown GBS status and her membranes have ruptured for > 18 hours; or

d. clinical signs of infection.

e. Antibiotics are NOT needed when a woman is GBS-negative, regardless of duration of rupture, unless there are clinical signs of infection present. This point specifically should be discussed with mothers while offering informed consent for GBS screening antenatally.

7. When evaluating the evidence regarding the most appropriate method of induction, the large TERMPROM study demonstrated oxytocin to have the lowest rate of infection, compared to those in the prostaglandin group. All other maternal outcomes were the same. The use of oral misoprostol has been shown to be comparable to oxytocin in some studies. The optimal method of induction for term PROM has not been determined.

8. Alternative options for induction include:

a. Nipple stimulation

b. Homeopathic black cohosh (Actaea racemosa) and blue cohosh (Caulophyllum thalictroides), every fifteen to thirty minutes. If there is poor response, blue and black cohosh in tincture form should be alternated.

c. Herbal black and blue cohosh, every fifteen to thirty minutes.
d. Herbal tincture of cotton root bark (*Gossypium hebraeum*), every fifteen to thirty minutes.

**REFERENCES:**

**Originated:** July, 2011